pench for 09/439, 594. clai 60-73

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- L1 0 PRIMER#(10A)(TWO SEGMENT# OR TWO REGION#)(10A) STEM-LOOP
- => s primer#(10a)(two segment# or two region#)
- L2 162 PRIMER#(10A)(TWO SEGMENT# OR TWO REGION#)
- => s 12 and stem-loop
- L3 6 L2 AND STEM-LOOP
- => s 13 and displac?
- L4 3 L3 AND DISPLAC?
- => d 14 1-3 bib ab
- L4 ANSWER 1 OF 3 USPATFULL
- AN 2000:24448 USPATFULL
- TI Method for introducing defined sequences at the 3' end of polynucleotides
- IN Laney, Maureen, Palo Alto, CA, United States Chen, Yan, Palo Alto, CA, United States Ullman, Edwin F., Atherton, CA, United States

Hahnenberger, Karen M., Cupertino, CA, United States

PA Behring Diagnostics GmbH, Germany, Federal Republic of (non-U.S. corporation)

PI US 6030774 20000229

Al US 1995-479745 19950607 (8)

RLI Continuation of Ser. No. US 1993-140349, filed on 20 Oct 1993, now patented, Pat. No. US 5679512 which is a continuation-in-part of Ser. No. US 1992-923079, filed on 31 Jul 1992, now abandoned

DT Utility

EXNAM Primary Examiner: Campbell, Eggerton A.

LREP Leitereg, Theodore J. CLMN Number of Claims: 20

ECL Exemplary Claim: 1

DRWN 16 Drawing Figure(s); 16 Drawing Page(s)

LN.CNT 2341

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

A method is disclosed for extending a primer to produce a single stranded polydeoxynucleotide that has two or more defined sequences. A combination is provided which comprises a template polynucleotide, a blocker polynucleotide, a primer polynucleotide and a polynucleotide Q. The template polynucleotide has three sequences T1, T2 and T3 wherein T1 is non-contiguous and 3' of T3 and wherein the 5' end of T3 is 5' of the 5' end of T2. The primer polynucleotide has a second defined sequence at its 3' end that is hybridizable with T1. The blocker polynucleotide has sequence B1 that is hybridizable with T3. Polynucleotide Q has sequences S1 and S2 wherein S1 is 3' of S2 and homologous with T2 and S2 is complementary to a first defined sequence that is to be introduced at the 3' end of the polynucleotide primer, when it is extended during the method of the invention. Polynucleotide Q is either attached to the 5' end of the blocker polynucleotide or present as a separate reagent. The primer is extended along the template polynucleotide and along at least a portion of sequence T2 and thereafter along the polynucleotide Q to give a single stranded polynucleotide having two or more defined sequences.

#### L4 ANSWER 2 OF 3 USPATFULL

AN 97:101637 USPATFULL

TI Methods for producing a single stranded polydeoxynucleotide having two different defined sequences and kits

IN Laney, Maureen, Palo Alto, CA, United States
 Chen, Yan, Palo Alto, CA, United States
 Ullman, Edwin F., Atherton, CA, United States
 Hahnenberger, Karen M., Cupertino, CA, United States

PA Behringwerke AG, Marburg, Germany, Federal Republic of (non-U.S. corporation)

PI US 5683879 19971104

AI US 1995-475236 19950607 (8)

RLI Continuation of Ser. No. US 1993-140349, filed on 20 Oct 1993 which is a continuation-in-part of Ser. No. US 1992-923079, filed on 31 Jul 1992, now abandoned

DT Utility

EXNAM Primary Examiner: Campbell, Eggerton A.

LREP Leitereg, Theodore J. CLMN Number of Claims: 12 ECL Exemplary Claim: 1

DRWN 17 Drawing Figure(s); 16 Drawing Page(s)

LN.CNT 2461

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

A method is disclosed for extending a primer to produce a single stranded polydeoxynucleotide that has two or more defined sequences. A combination is provided which comprises a template polynucleotide, a blocker polynucleotide, a primer polynucleotide and a polynucleotide Q. The template polynucleotide has three sequences T1, T2 and T3 wherein T1 is non-contiguous and 3' of T3 and wherein the 5' end of T3 is 5' of the 5' end of T2. The primer polynucleotide has a second defined sequence at its 3' end that is hybridizable with T1. The blocker polynucleotide has sequence B1 that is hybridizable with T3. Polynucleotide Q has sequences S1 and S2 wherein S1 is 3' of S2 and homologous with T2 and S2 is complementary to a first defined sequence that is to be introduced at the 3' end of the polynucleotide primer, when it is extended during the method of the invention. Polynucleotide Q is either attached to the 5' end of the blocker polynucleotide or present as a separate reagent. The primer is extended along the template polynucleotide and along at least a portion of sequence T2 and thereafter along the polynucleotide Q to give a single stranded polynucleotide having two or more defined sequences.

#### L4 ANSWER 3 OF 3 USPATFULL

AN 97:96713 USPATFULL

TI Method for introducing defined sequences at the 3'end of polynucleotides

IN Laney, Maureen, Palo Alto, CA, United States
 Chen, Yan, Palo Alto, CA, United States
 Ullman, Edwin F., Atherton, CA, United States
 Hahnenberger, Karen M., Cupertino, CA, United States

PA Behringwerke AG, Marburg, Germany, Federal Republic of (non-U.S. corporation)

PI US 5679512 19971021

AI US 1993-140349 19931020 (8)

RLI Continuation-in-part of Ser. No. US 1992-923079, filed on 31 Jul 1992, now abandoned

DT Utility

EXNAM Primary Examiner: Jones, W. Gary; Assistant Examiner: Campbell, Eggerton

LREP Leitereg, Theodore J.
CLMN Number of Claims: 39
ECL Exemplary Claim: 1

DRWN 17 Drawing Figure(s); 16 Drawing Page(s)

LN.CNT 2595

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

A method is disclosed for extending a primer to produce a single stranded polydeoxynucleotide that has two or more defined sequences. A combination is provided which comprises a template polynucleotide, a blocker polynucleotide, a primer polynucleotide and a polynucleotide Q. The template polynucleotide has three sequences T1, T2 and T3 wherein T1 is non-contiguous and 3' of 13 and wherein the 5' end of 13 is 5' of the 5' end of T2. The primer polynucleotide has a second defined sequence at its 3' end that is hybridizable with T1. The blocker polynucleotide has sequence B1 that is hybridizable with T3. Polynucleotide Q has sequences S1 and S2 wherein S1 is 3' of S2 and homologous with T2 and S2 is complementary to a first defined sequence that is to be introduced at the 3' end of the polynucleotide primer, when it is extended during the method of the invention. Polynucleotide Q is either attached to the 5' end of the blocker polynucleotide or present as a separate reagent. The primer is extended along the template polynucleotide and along at least a portion of sequence T2 and thereafter along the polynucleotide Q to give a single stranded polynucleotide having two or more defined sequences.

=> d 14 3 kwic

#### L4 ANSWER 3 OF 3 USPATFULL

SUMM Another embodiment of the present invention concerns a method for producing from a \*\*\*primer\*\*\* polynucleotide a single stranded polydeoxynucleotide having \*\*\*two\*\*\* \*\*\*segments\*\*\* that are non-contiguous and complementary with each other. The method comprises the steps of: (a) providing in combination (1) a. . .

DETD . . . two segments that are non-contiguous and complementary with each other, otherwise known as an inverted repeat, which can form a \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure. The method has particular application in the area of single primer amplification, in which a target polynucleotide sequence in. . .

DETD . . . sequence in common with the 5' end of T2, the 5' end of the blocker polynucleotide sequence B1 may be \*\*\*displaced\*\*\* during extension. The partially extended primer then consists at its 3' end of

bases complementary to the 3' end of. . . S1 and homologous to the 5' end of the blocker sequence B1. Whether the 5' end of the blocker is \*\*\*displaced\*\*\* by DNA polymerase depends on the temperature at which the reaction is conducted, the base content and structure of the. . . the type of DNA polymerase employed. For example, Vent DNA polymerase, while extending the 3' end of a primer, may \*\*\*displace\*\*\* the 5' end of a specific encountered DNA polymerase at 72.degree. C., but not at 55.degree. C. Therefore, with this. . .

DETD . . . appropriate reaction conditions, the primer is extended along the template and along T2. Under the reaction conditions the polymerase partially \*\*\*displaces\*\*\* the 5' end of the blocker and the primer extends along the full length of T2. The 5' end of. . .

DETD Synthesis of Single Stranded Polynucleotide Having a \*\*\*Stem\*\*\*

\*\*\*Loop\*\*\* Structure

DETD . . . a single stranded polynucleotide having two sequences that are non-contiguous and hybridizable with each other otherwise referred to as a \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure. The method involved strand switching by an extending primer from a template polynucleotide to a polynucleotide Q in the presence of a blocker to form a polynucleotide with a \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure. Polynucleotide Q, therefore, had a sequence S2 that was homologous to the extending primer.

DETD . . . blocker was hybridized) and the remainder of the products formed were approximately 225 bases in length (arising from the complete \*\*\*displacement\*\*\* of the blocker from the template and extension of the Ext. Primer through the entire length of the template). In. . . the total products formed in this reaction No.12). This product of reaction No.12 corresponded to the predicted polynucleotide having a \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure formed in accordance with the present invention.

DETD . . . product 130-140 bases in length by the single primer demonstrated that this product has an internal base paired structure or \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure, which could only have been formed in accordance with the present invention. The above single primer amplification product was. . .

DETD Synthesis of a Single Stranded Polynucleotide with \*\*\*Stem\*\*\*

\*\*\*Loop\*\*\* Structure and its Amplification by Single Primer

Amplification

DETD . . . polynucleotide primer in accordance with the present invention generated an amplifiable polynucleotide sequence having an intramolecular base pair structure or \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure. The polynucleotide primer hybridized to M13mp7 at bases 6806-6830.

DETD The formation and amplication of such a \*\*\*stem\*\*\* \*\*\*loop\*\*\* molecule was carried out using single stranded M13mp7 and M13mp19

(double-stranded replicarive form, 7250 base pairs from Bethesda Research Laboratories).. . .

DETD . . . it switched strands and was extended along polynucleotide Q to give extended primer having an internal base paired structure or \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure. The latter molecule was then amplified by single primer amplification as described earlier.

DETD Effect of Temperature on Formation of a Single Stranded Polynucleotide Having a \*\*\*Stem\*\*\* \*\*\*Loop\*\*\* Structure

DETD . . . bases 6351-6390. The polynucleotide primer (Oligomer 8) served to generate an amplifiable polynucleotide sequence having an intramolecular base pair, or \*\*\*stem\*\*\* \*\*\*loop\*\*\*, structure and hybridized to M13mp7 at bases 6806-6830. All the reagents except for the enzyme were added (.mu.l) in eppendorf. . .

DETD In order to determine the effect of temperature on strand switching resulting in the formation of a polynucleotide with a \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure, the above reaction was conducted. The reaction was done with the extended blocker. The Extended Blocker had 40 bases.

DETD . . . strand switched product of approximately 480 bases in length (arrows on FIG. 12). At 75.degree. C., when polymerase was efficiently \*\*\*displacing\*\*\* blocker oligomer 8 (Lane 7), the amount of this expected product decreased.

DETD Synthesis of a Single Stranded Polynucleotide with \*\*\*Stem\*\*\* \*\*\*Loop\*\*\* Structure Upon E. coli Genomic DNA and its Amplification by Single Primer Amplification

DETD Synthesis of a Single Stranded Polynucleotide with \*\*\*Stem\*\*\* \*\*\*Loop\*\*\* Structure Upon Mycobacterium tuberculosis Genomic DNA in the presence of Human Genomic DNA and its Amplification by Single Primer Amplification

CLM What is claimed is:

2. A method for producing from a \*\*\*primer\*\*\* polynucleotide a single stranded polydeoxynucleotide having \*\*\*two\*\*\* \*\*\*segments\*\*\* that are non-contiguous and complementary with each other, said method comprising the steps of: (a) providing in combination (a) a. . .

=> d 14 1 kwic

L4 ANSWER 1 OF 3 USPATFULL

SUMM Another embodiment of the present invention concerns a method for producing from a \*\*\*primer\*\*\* polynucleotide a single stranded polydeoxynucleotide having \*\*\*two\*\*\* \*\*\*segments\*\*\* that are non-contiguous and complementary with each other. The method comprises the steps of: (a) providing in combination (1) a. . .

DETD . . . two segments that are non-contiguous and complementary with each other, otherwise known as an inverted repeat, which can form a \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure. The method has particular application in the area of single primer amplification, in which a target polynucleotide sequence in. . .

DETD . . . sequence in common with the 5' end of T2, the 5' end of the blocker polynucleotide sequence B1 may be \*\*\*displaced\*\*\* during extension. The partially extended primer then consists at its 3'end of bases complementary to the 3'end of T3, the. . . end of S1 and homologous to the 5'end of the blocker sequence B1. Whether the 5'end of the blocker is \*\*\*displaced\*\*\* by DNA polymerase depends on the temperature at which the reaction is conducted, the base content and structure of the. . . on the type of DNA polymerase employed. For example, Vent DNA polymerase, while extending the 3'end of a primer, may \*\*\*displace\*\*\* the 5' end of a specific encountered DNA polymerase at 72.degree. C., but not at 55.degree. C. Therefore, with this. . .

DETD . . . appropriate reaction conditions, the primer is extended along the template and along T2. Under the reaction conditions the polymerase partially \*\*\*displaces\*\*\* the 5' end of the blocker and the primer extends along the full length of T2. The 5' end of. . .

DETD Synthesis of Single Stranded Polynucleotide Having a \*\*\*Stem\*\*\*

\*\*\*Loop\*\*\* Structure

DETD . . . a single stranded polynucleotide having two sequences that are non-contiguous and hybridizable with each other otherwise referred to as a \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure. The method involved strand switching by an extending primer from a template polynucleotide to a polynucleotide Q in the presence of a blocker to form a polynucleotide with a \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure. Polynucleotide Q. therefore, had a sequence S2 that was homologous to the extending primer.

DETD . . . blocker was hybridized) and the remainder of the products formed were approximately 225 bases in length (arising from the complete \*\*\*displacement\*\*\* of the blocker from the template and extension of the Ext. Primer through the entire length of the template). In. . . the total products formed in this reaction No.12). This product of reaction No.12 corresponded to the predicted polynucleotide having a \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure formed in accordance with the present invention.

DETD . . . product 130-140 bases in length by the single primer demonstrated that this product has an internal base paired structure or \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure, which could only have been formed in accordance with the present invention. The above single primer amplification product was. . .

DETD Synthesis of a Single Stranded Polynucleotide with \*\*\*Stem\*\*\*

- \*\*\*Loop\*\*\* Structure and its Amplification by Single Primer Amplification
- DETD . . . polynucleotide primer in accordance with the present invention generated an amplifiable polynucleotide sequence having an intramolecular base pair structure or \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure. The polynucleotide primer hybridized to M13mp7 at bases 6806-6830.
- DETD The formation and amplication of such a \*\*\*stem\*\*\* \*\*\*loop\*\*\* molecule was carried out using single stranded M13mp7 and M13mp19 (double-stranded replicative form, 7250 base pairs from Bethesda Research Laboratories)....
- DETD . . . it switched strands and was extended along polynucleotide Q to give extended primer having an internal base paired structure or \*\*\*stem\*\*\* \*\*\*loop\*\*\* structure. The latter molecule was then amplified by single primer amplification as described earlier.
- DETD Effect of Temperature on Formation of a Single Stranded Polynucleotide Having a \*\*\*Stem\*\*\* \*\*\*Loop\*\*\* Structure
- DETD . . . bases 6351-6390. The polynucleotide primer (Oligomer 8) served to generate an amplifiable polynucleotide sequence having an intramolecular base pair, or \*\*\*stem\*\*\* \*\*\*loop\*\*\*, structure and hybridized to M13mp7 at bases 6806-6830. All the reagents except for the enzyme were added (.mu.l) in eppendorf. . .
- DETD In order to determine the effect of temperature on strand switching resulting in the formation of a polynucleotide with a \*\*\*stem\*\*\*

  \*\*\*loop\*\*\* structure, the above reaction was conducted. The reaction was done with the extended blocker. The Extended Blocker had 40 bases.
- DETD . . . strand switched product of approximately 480 bases in length (arrows on FIG. 12). At 75.degree. C., when polymerase was efficiently \*\*\*displacing\*\*\* blocker oligomer 8 (Lane 7), the amount of this expected product decreased.
- DETD Synthesis of a Single Stranded Polynucleotide with \*\*\*Stem\*\*\*

  \*\*\*Loop\*\*\* Structure Upon E. coli Genomic DNA and its Amplification by

  Single Primer Amplification
- DETD Synthesis of a Single Stranded Polynucleotide with \*\*\*Stem\*\*\*

  \*\*\*Loop\*\*\* Structure Upon Mycobacterium tuberculosis Genomic DNA in the Presence of Human Genomic DNA and its Amplification by Single Primer Amplification

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=> dup rem 13

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6 DUP REM L3 (0 DUPLICATES REMOVED) L5

=> d 15 1-6 bib ab

# L5 ANSWER 1 OF 6 USPATFULL

AN 2000:142102 USPATFULL

TI Continuous amplification reaction

IN Lorincz, Attila T., North Potomac, MD, United States DeLaRosa, Abel, Gaithersburg, MD, United States

PA Digene Corporation, Gaithersburg, MD, United States (U.S. corporation)

PI US 6136535 20001024

AI US 1998-131567 19980810 (9)

RLI Continuation-in-part of Ser. No. US 1995-527864, filed on 14 Sep 1995, now patented, Pat. No. US 5981179 which is a continuation-in-part of Ser. No. US 1994-183154, filed on 18 Jan 1994 which is a continuation of Ser. No. US 1991-792585, filed on 14 Nov 1991, now abandoned

DT Utility

EXNAM Primary Examiner: Jones, W. Gary; Assistant Examiner: Tung, Joyce

LREP Morgan & Finnegan, L.L.P.; Moroz, Eugene; Auth, Dorothy R.

CLMN Number of Claims: 24

ECL Exemplary Claim: 1

DRWN 10 Drawing Figure(s); 6 Drawing Page(s)

LN.CNT 1475

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

Continuous amplification reaction provide a method of amplifying a specific nucleic acid without the need to cycle a reaction. The method produces RNA transcripts which can be detected by a variety of methods. Amplification and detection kits are also provided.

### L5 ANSWER 2 OF 6 USPATFULL

AN 2000:24481 USPATFULL

TI Highly regulable promoter for heterologous gene expression

IN De Lencastre, Herminia, New York, NY, United States De Sa-Nogueira, Isabel, Oeiras, Portugal

PA The Rockefeller University, New York, NY, United States (U.S. corporation)

PI US 6030807 20000229

AI US 1997-926842 19970910 (8)

19960910 (60) PRAI US 1996-31077

DI Utility

EXNAM Primary Examiner: Railey, II, Johnny F.

LREP Klauber & Jackson CLMN Number of Claims: 22

ECL Exemplary Claim: 1

DRWN 29 Drawing Figure(s); 28 Drawing Page(s)

LN.CNT 3892

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to an operon encoding enzymes involved in the utilization of L-arabinose, to the promoter derived therefrom, and to expression systems utilizing the promoter. The promoter is particularly useful for expression of DNA sequences in prokaryotes because of their inducibility and repressibility of the promoter. The invention also relates to the enzymes of the operon, and antibodies thereto.

#### L5 ANSWER 3 OF 6 USPATFULL

2000:24448 USPATFULL

TI Method for introducing defined sequences at the 3' end of polynucleotides

IN Laney, Maureen, Palo Alto, CA, United States Chen, Yan, Palo Alto, CA, United States Ullman, Edwin F., Atherton, CA, United States Hahnenberger, Karen M., Cupertino, CA, United States

PA Behring Diagnostics GmbH, Germany, Federal Republic of (non-U.S. corporation)

PI US 6030774 20000229

AI US 1995-479745 19950607 (8)

RLI Continuation of Ser. No. US 1993-140349, filed on 20 Oct 1993, now patented, Pat. No. US 5679512 which is a continuation-in-part of Ser. No. US 1992-923079, filed on 31 Jul 1992, now abandoned

DT Utility

EXNAM Primary Examiner: Campbell, Eggerton A.

LREP Leitereg, Theodore J. CLMN Number of Claims: 20

ECL Exemplary Claim: 1 DRWN 16 Drawing Figure(s); 16 Drawing Page(s)

LN.CNT 2341

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

A method is disclosed for extending a primer to produce a single stranded polydeoxynucleotide that has two or more defined sequences. A combination is provided which comprises a template polynucleotide, a blocker polynucleotide, a primer polynucleotide and a polynucleotide Q. The template polynucleotide has three sequences T1, T2 and T3 wherein T1 is non-contiguous and 3' of T3 and wherein the 5' end of T3 is 5' of the 5' end of T2. The primer polynucleotide has a second defined sequence at

its 3' end that is hybridizable with T1. The blocker polynucleotide has sequence B1 that is hybridizable with T3. Polynucleotide Q has sequences S1 and S2 wherein S1 is 3' of S2 and homologous with T2 and S2 is complementary to a first defined sequence that is to be introduced at the 3' end of the polynucleotide primer, when it is extended during the method of the invention. Polynucleotide Q is either attached to the 5' end of the blocker polynucleotide or present as a separate reagent. The primer is extended along the template polynucleotide and along at least a portion of sequence T2 and thereafter along the polynucleotide Q to give a single stranded polynucleotide having two or more defined sequences.

#### L5 ANSWER 4 OF 6 USPATFULL

AN 1999:141586 USPATFULL

TI Continuous amplification reaction

IN Lorinez, Attila T., North Potomac, MD, United States DeLaRosa, Abel, Bethesda, MD, United States

PA Digene Diagnostics, Inc., Beltsville, MD, United States (U.S. corporation)

PI US 5981179 19991109

AI US 1995-527864 19950914 (8)

RLI Continuation-in-part of Ser. No. US 1994-183154, filed on 18 Jan 1994, now patented, Pat. No. US 5570099 which is a continuation of Ser. No. US 1991-792585, filed on 14 Nov 1991, now abandoned

DT Utility

EXNAM Primary Examiner: Zitomer, Stephanie W.; Assistant Examiner: Tung, Joyce

LREP Morgan & Finnegan, L.L.P.

CLMN Number of Claims: 26

ECL Exemplary Claim: 1

DRWN 6 Drawing Figure(s); 6 Drawing Page(s)

LN.CNT 1435

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Continuous amplification reaction provide a method of amplifying a specific nucleic acid without the need to cycle a reaction. The method produces RNA transcripts which can be detected by a variety of methods. Amplification and detection kits are also provided.

## L5 ANSWER 5 OF 6 USPATFULL

AN 97:101637 USPATFULL

TI Methods for producing a single stranded polydeoxynucleotide having two different defined sequences and kits

IN Laney, Maureen, Palo Alto, CA, United States Chen, Yan, Palo Alto, CA, United States Ullman, Edwin F., Atherton, CA, United States Hahnenberger, Karen M., Cupertino, CA, United States

Behringwerke AG, Marburg, Germany, Federal Republic of (non-U.S. corporation)

US 5683879 19971104 PI

AI US 1995-475236 19950607 (8)

RLI Continuation of Ser. No. US 1993-140349, filed on 20 Oct 1993 which is a continuation-in-part of Ser. No. US 1992-923079, filed on 31 Jul 1992, now abandoned

Utility DT

EXNAM Primary Examiner: Campbell, Eggerton A.

LREP Leitereg, Theodore J. CEMN Number of Claims: 12 ECL Exemplary Claim: 1

DRWN 17 Drawing Figure(s); 16 Drawing Page(s)

LN.CNT 2461

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

A method is disclosed for extending a primer to produce a single stranded polydeoxynucleotide that has two or more defined sequences. A combination is provided which comprises a template polynucleotide, a blocker polynucleotide, a primer polynucleotide and a polynucleotide Q. The template polynucleotide has three sequences T1, T2 and T3 wherein T1 is non-contiguous and 3' of T3 and wherein the 5' end of T3 is 5' of the 5' end of T2. The primer polynucleotide has a second defined sequence at its 3' end that is hybridizable with T1. The blocker polynucleotide has sequence B1 that is hybridizable with T3. Polynucleotide Q has sequences S1 and S2 wherein S1 is 3' of S2 and homologous with T2 and S2 is complementary to a first defined sequence that is to be introduced at the 3' end of the polynucleotide primer, when it is extended during the method of the invention. Polynucleotide Q is either attached to the 5' end of the blocker polynucleotide or present as a separate reagent. The primer is extended along the template polynucleotide and along at least a portion of sequence T2 and thereafter along the polynucleotide Q to give a single stranded polynucleotide having two or more defined sequences.

L5 ANSWER 6 OF 6 USPATFULL

AN 97:96713 USPATFULL

TI Method for introducing defined sequences at the 3'end of polynucleotides

IN Laney, Maureen, Palo Alto, CA, United States Chen, Yan, Palo Alto, CA, United States Ullman, Edwin F., Atherton, CA, United States Hahnenberger, Karen M., Cupertino, CA, United States

PA Behringwerke AG, Marburg, Germany, Federal Republic of (non-U.S. corporation)

PI US 5679512 19971021

AI US 1993-140349 19931020 (8)

RLI Continuation-in-part of Ser. No. US 1992-923079, filed on 31 Jul 1992, now abandoned

Utility

EXNAM Primary Examiner: Jones, W. Gary; Assistant Examiner: Campbell, Eggerton

LREP Leitereg, Theodore J. CLMN Number of Claims: 39

ECL Exemplary Claim: 1

DRWN 17 Drawing Figure(s); 16 Drawing Page(s)

LN.CNT 2595

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

A method is disclosed for extending a primer to produce a single stranded polydeoxynucleotide that has two or more defined sequences. A combination is provided which comprises a template polynucleotide, a blocker polynucleotide, a primer polynucleotide and a polynucleotide Q. The template polynucleotide has three sequences T1, T2 and T3 wherein T1 is non-contiguous and 3' of T3 and wherein the 5' end of T3 is 5' of the 5' end of T2. The primer polynucleotide has a second defined sequence at its 3' end that is hybridizable with T1. The blocker polynucleotide has sequence B1 that is hybridizable with T3. Polynucleotide Q has sequences S1 and S2 wherein S1 is 3' of S2 and homologous with T2 and S2 is complementary to a first defined sequence that is to be introduced at the 3' end of the polynucleotide primer, when it is extended during the method of the invention. Polynucleotide Q is either attached to the 5' end of the blocker polynucleotide or present as a separate reagent. The primer is extended along the template polynucleotide and along at least a portion of sequence T2 and thereafter along the polynucleotide Q to give a single stranded polynucleotide having two or more defined sequences.

=> d 15 2 kwic

### L5 ANSWER 2 OF 6 USPATFULL

DRWD . . . from the analysis of the nucleotide sequence, are indicated by arrows. The promoter (P) of the ara operon, defined by \*\*\*primer\*\*\* extension, is located upstream the araA gene and the \*\*\*two\*\*\* \*\*\*region\*\*\* of dyad symmetry that could represent the terminators of the ara transcriptional unit are located downstream the abfA gene. The.

DRWD . . . sequence (ribosome binding site). The free energy (AG.sup.0) of interaction for each putative ribosome binding site and for the predicted \*\*\*stem\*\*\* - \*\*\*loop\*\*\* structures of the putative terminators of the ara operon, T1 and T2, were calculated according to the rules of Tinoco. . .

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